

AD-A102 260 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
193040 MLRS, MISSILE NUMBERS BK 001, V01-001, V01-002, ROUND NU--ETC(U)
MAY 81 D C KELLER
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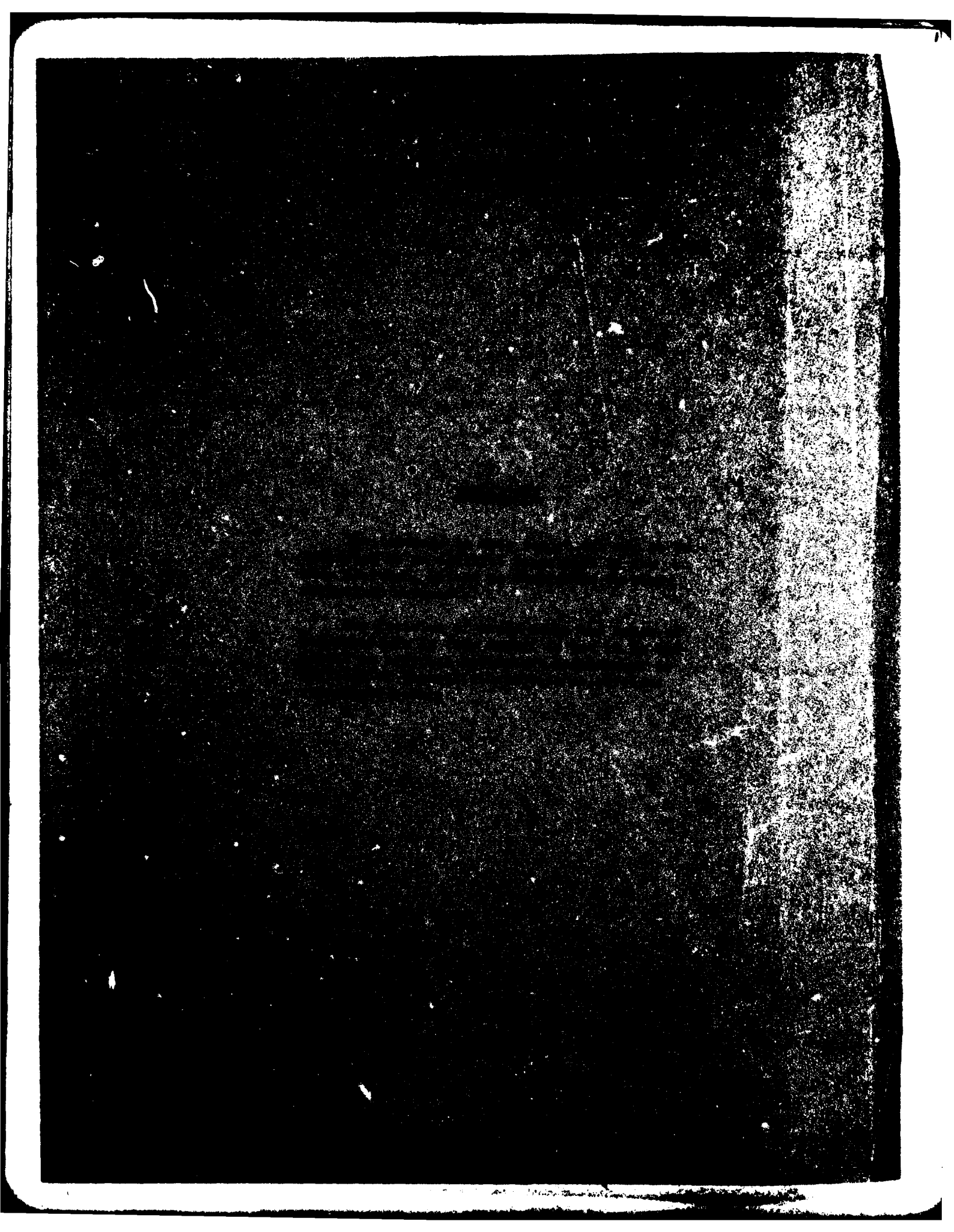
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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19304D MLRS, Missile NO. BK 001, V01-001, and V01-002, Round No. V-14-/MD-7, V-141/MD-8 and V-142/MD-9 presented in tabular form.		

420

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SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)



SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

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INTRODUCTION

19304D MLRS, Missile Numbers BK 001, V01-001, and V01-002, Round Numbers V-140/MD7, V-141/MD8, and V-142/MD9, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1315:28, 1315:32, and 1315:37 MDT, 11 May 1981. The scheduled launch times were 1300, 1300:04, and 1300:09 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data was obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature (C), relative humidity, dew point (C), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from RAPTS T-9 pibal observation at:

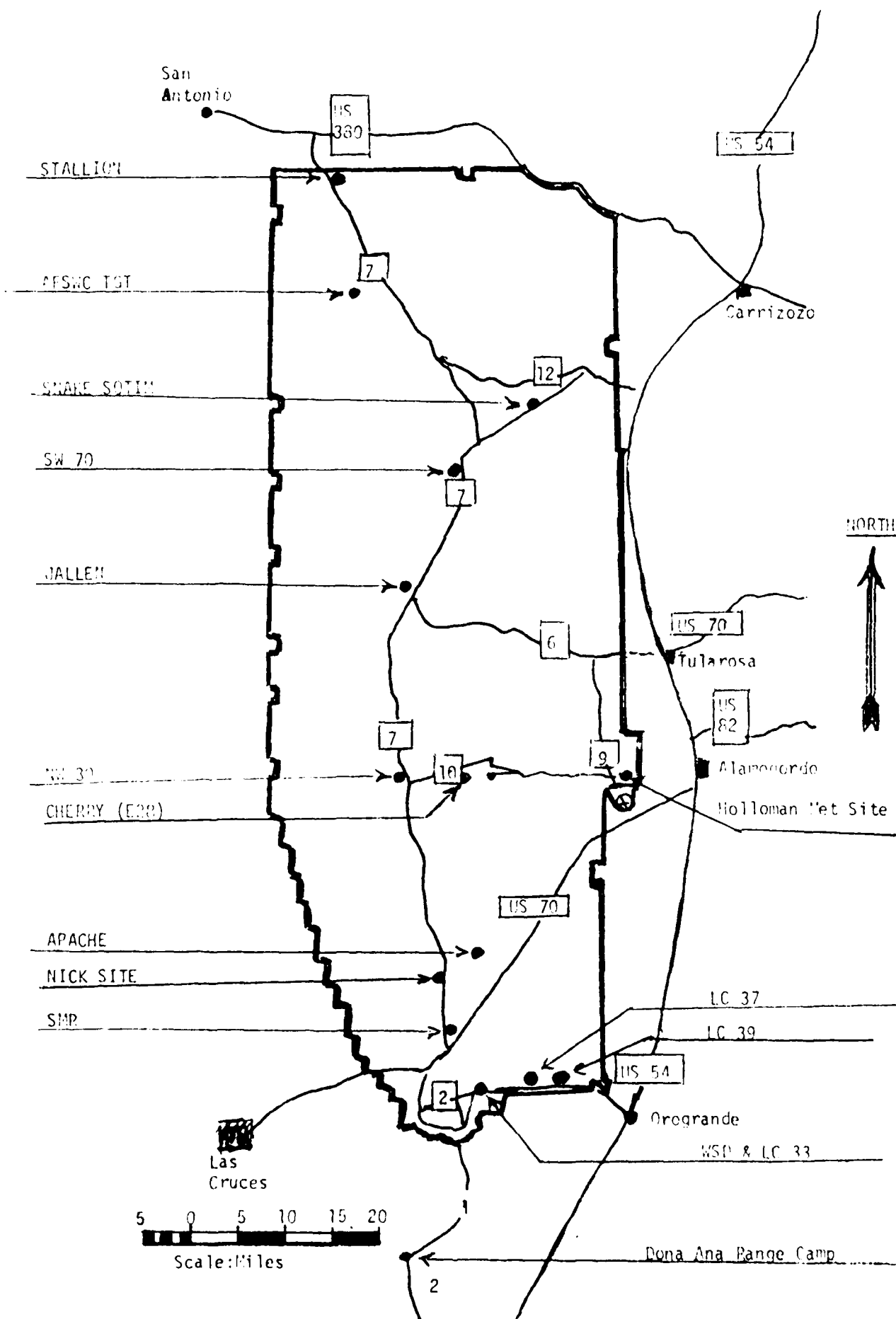
SITE AND ALITUDE

LC-33	2 KM
NICK	2 KM

(2) Air structure data (rawinsonde) were collected at the following Met Sites:

SITE AND TIME

LC-37	1000 MDT
WSD	1100 MDT
LC-37	1200 MDT
LC-37	1300 MDT



PROJECT SURFACE OBSERVATION

TABLE 1		STATION LC-33							
DATE 11 May 81		Y= 484.982 64 Y= 185.957.73 H= 3982.00							
TIME M D T	PRESSURE mbs	TEMPERATURE of °C	DEW POINT of °C	RELATIVE HUMIDITY %	DENSITY gm/m ³	WIND DIRECTION degs In	WIND SPEED kts	CHARACTER kts	VISIBIL- ITY
1315	876.0	27.8	6.4	26	1008	290	08		50

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	TYPE	AMT	TYPE	AMT	TYPE	
2	CS	22,000					

PSYCHROMETRIC COMPUTATION

TIME:	1315	
DRY BULB TEMP.	27.8	
WET BULB TEMP.	14.9	
WET BULB DEPR.	12.9	
DEW POINT	6.4	
RELATIVE HUMID.	26	

TABLE

2

LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.20 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.93 Y185,957.90 H4033.57 53.5 ft. AGL			POLE #3 X485,877.10 Y185,956.16 H4043.42 68.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	298	07	T-30	283	05	T-30	315	09
T-20	289	07	T-20	273	06	T-20	309	08
T-10	288	09	T-10	294	06	T-10	295	06
T0.0	287	07	T0.0	293	05	T0.0	297	09
T+10	298	09	T+10	283	03	T+10	280	09

TABLE

3

LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,957.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,957.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	300	06	T-30	290	10
T-20	315	06	T-20	286	10
T-10	314	09	T-10	292	11
T0.0	293	08	T0.0	287	11
T+10	275	07	T+10	277	10

LEVEL #3, 102 FEET X484,982.64, Y185,957.73, H3983.00 (base)			LEVEL #4, 182 FEET X484,982.64, Y185,957.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	288	09	T-30	291	10
T-20	282	10	T-20	281	10
T-10	278	10	T-10	251	12
T0.0	275	09	T0.0	264	11
T+10	268	09	T+10	260	09

TABLE 4

T-TIME PILOT-BALLOON TRACKING DATA

DATE 11 May 1981

SITE: LC-33

TIME: 1315 MDT

WSTN COORDINATES:

X= 485,135.76

Y= 185,919.24

H= 3988.57

SITE: NICK

TIME: 1315 MDT

WSTN COORDINATES:

X= 470,734.56

Y= 255,775.64

H= 4126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	290	08
150	282	13
210	273	18
270	272	19
330	273	18
390	269	16
500	258	14
600	276	10
700	262	16
850	254	18
1100	252	17
1350	252	19
1550	254	21
1750	254	23
2000	261	23

Data obtained from
RAPTS T-9 radar
Tracked Pilot-Balloon

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	229	03
150	252	08
210	255	10
270	257	12
330	258	13
390	258	14
500	256	14
600	255	13
700	258	11
850	263	10
1100	274	08
1350	276	09
1550	272	11
1750	271	11
2000	263	10

Data obtained from
Single Theodolite
Tracked Pilot-Balloon

AIMING AND T-TIME COMPUTER MET MESSAGES
11 May 1981

LC-37 1000 MDT

METCM1324063

111600124877

00284006 29510877

01324008 29220866

02349009 29080841

03483014 28870803

04497022 28500765

05502024 28030712

06489021 27630670

07479023 27280629

08474023 26900591

09462025 26520555

10469029 26190520

11466030 25810487

WSD 1100 MDT

METCM1324064

111700122878

00284009 29940878

01295012 29760868

02320010 29410843

03465011 28940805

04501021 28570758

05500026 28140714

06495023 27730672

07490022 27300632

08503025 26920593

09486027 26600557

10466032 26390522

11473033 25950489

LC-37 1200 MDT

METCM1324063

111800124876

00320006 30080876

01334008 29770866

02339010 29460841

03363011 29100803

04453012 28620757

05451018 28140713

06479018 27650670

07484032 27250630

08489030 26940592

09469035 26710555

10468032 26390521

11473036 25980488

LC-37 1300 MDT

METCM1324063

111900124875

00462010 30210875

01503031 29930865

02502017 29640840

03501018 29250802

04473015 28740756

05441014 28260712

06458018 27760670

07461016 27270630

08471030 26830592

09501035 26580555

10488032 26270520

11476035 25870488

STATION ALTITUDE 4051.37 FEET MSL
11 MAY 81 1000 HRS MDT
ASCENSION NO. 79

SIGNIFICANT LEVEL DATA
1310180079
LC-37
TABLE 6

GEODETTIC COORDINATES
32.40175 LAT DEG
106.51232 LONG DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
676.5	4051.4	21.0	3.2	31.0
373.1	4161.2	18.5	2.4	34.0
350.0	4013.3	16.6	1.9	37.0
334.7	5421.4	16.9	.1	32.0
325.1	5744.8	16.5	-1.1	30.0
773.4	7540.1	12.8	-9.6	20.0
700.0	10251.9	5.4	-13.5	24.0
643.0	12511.7	.6	-19.2	21.0
617.2	13587.2	-1.7	-19.6	24.0
533.6	17333.4	-10.3	-20.9	20.0
525.6	17715.8	-10.5	-29.0	20.0
500.0	18972.7	-13.3	-31.4	20.0
411.9	23701.3	-26.7	-30.1	33.0
400.0	24396.1	-27.8	-30.2	36.0
382.6	25443.1	-30.1	-30.8	42.0
368.8	26301.0	-31.7	-30.8	49.0
348.6	27602.5	-35.3	-41.8	51.0
329.3	28900.2	-38.4	-46.0	44.0
316.4	29801.1	-40.3	-48.6	40.0
310.4	30229.9	-41.5	-49.7	40.0
300.0	30087.3	-43.9		

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

UPPER AIR DATA
1310180079
LC-37

TABLE 7

STATION ALTITUDE 4051.37 FEET MSL
11 MAY 81 1000 HRS PDT
ASCENSION NO. 79

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND METER PER SECOND	WIND DATA DIRECTION DEGREES (T) KNOTS	INDEX OF REFRACTION
4051.4	870.5	21.0	31.0	1034.6	669.3	160.0	1.000264
4500.0	862.6	17.6	35.4	1030.2	665.4	186.7	1.000262
5000.0	847.4	16.7	36.1	1015.5	664.2	221.5	1.000257
5500.0	832.4	16.8	31.5	997.3	664.3	244.0	1.000249
6000.0	817.5	16.0	28.6	982.7	663.2	258.1	1.000242
6500.0	802.9	14.9	25.8	968.9	661.9	268.9	1.000236
7000.0	780.6	13.9	23.0	955.3	660.6	274.8	1.000230
7500.0	774.5	12.9	20.2	941.9	659.4	277.9	1.000224
8000.0	760.4	11.5	20.7	929.2	657.8	280.4	1.000220
8500.0	746.6	10.2	21.4	916.7	656.2	282.0	1.000217
9000.0	733.0	8.8	22.2	904.4	654.6	283.0	1.000213
9500.0	719.6	7.5	22.9	892.3	653.0	282.1	1.000210
10000.0	706.5	6.1	23.6	880.4	651.4	280.8	1.000207
10500.0	693.5	4.9	23.7	868.0	649.9	278.1	1.000203
11000.0	680.6	3.8	23.0	855.2	648.7	275.9	1.000200
11500.0	667.9	2.7	22.3	842.6	647.4	274.0	1.000196
12000.0	655.5	1.7	21.7	830.1	646.1	273.4	1.000192
12500.0	643.3	.6	21.0	817.9	644.9	272.3	1.000189
13000.0	631.2	-4	22.4	805.6	643.0	270.8	1.000186
13500.0	619.3	-1.5	23.8	793.5	642.3	268.9	1.000183
14000.0	607.4	-2.6	23.6	781.6	641.0	268.2	1.000180
14500.0	595.7	-3.8	23.0	769.9	639.6	266.1	1.000177
15000.0	584.2	-4.9	22.5	758.4	638.2	263.5	1.000174
15500.0	573.0	-6.1	22.0	747.0	636.8	261.1	1.000171
16000.0	562.0	-7.2	21.4	735.9	635.4	259.0	1.000168
16500.0	551.2	-8.4	20.9	724.9	634.1	259.0	1.000165
17000.0	540.6	-9.5	20.4	714.0	632.7	259.2	1.000162
17500.0	530.1	-10.4	20.0	702.5	631.6	260.1	1.000160
18000.0	519.7	-11.1	20.0	690.7	630.7	261.0	1.000157
18500.0	509.5	-12.2	20.0	680.0	629.4	262.7	1.000154
19000.0	499.4	-13.4	20.1	669.5	628.0	263.8	1.000152
19500.0	489.3	-14.8	21.4	659.6	626.3	263.4	1.000149
20000.0	479.4	-16.2	22.8	649.8	624.6	262.8	1.000147
20500.0	469.7	-17.6	24.2	640.1	622.8	262.2	1.000145
21000.0	460.1	-19.0	25.6	630.6	621.1	261.0	1.000142
21500.0	450.8	-20.5	26.9	621.3	619.4	261.2	1.000140
22000.0	441.6	-21.9	28.3	612.2	617.6	262.0	1.000138
22500.0	432.7	-23.3	29.7	603.1	615.9	263.1	1.000136
23000.0	423.9	-24.7	31.1	594.3	614.1	264.8	1.000134
23500.0	415.3	-26.1	32.4	585.6	612.4	266.2	1.000132

STATION ALTITUDE 4051.37 FEET MSL
11 MAY 81 1000 HRS MDT
ASCENSION NO. 79

UPPER AIR DATA
1310180079
LC-37

GEOMETRIC COORDINATES
32.40175 LAT DEG
196.31232 LONG DEG

TABLE 7 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND/ KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE				DIRECTION DEGREES (T)	SPEED KNOTS	
24000.0	406.7	-27.2	-38.1	34.3	575.9	611.1	266.2	38.9	1.000130
24500.0	398.2	-28.0	-38.2	36.6	565.9	610.0	266.3	40.9	1.000127
25000.0	389.9	-29.1	-38.5	39.5	556.5	608.6	266.7	42.6	1.000125
25500.0	381.7	-30.2	-38.8	42.5	547.2	607.3	265.9	43.9	1.000123
26000.0	373.6	-31.1	-38.8	46.5	537.6	606.1	263.7	44.8	1.000121
26500.0	365.6	-32.3	-39.3	49.3	528.6	604.7	262.4	45.2	1.000119
27000.0	357.8	-33.6	-40.4	50.1	520.3	603.0	261.6	45.2	1.000117
27500.0	350.1	-35.0	-41.6	50.8	512.1	601.2	263.3	44.3	1.000115
28000.0	342.6	-36.2	-43.1	48.9	503.7	599.7	265.5	43.3	1.000113
28500.0	335.1	-37.4	-44.7	46.2	495.3	598.1	268.1	45.1	1.000111
29000.0	327.8	-38.6	-46.3	43.6	486.9	596.7	266.4	47.0	1.000109
29500.0	320.7	-39.7	-47.7	41.3	478.4	595.3	265.9	49.2	1.000107
30000.0	313.6	-40.9	-49.1	40.0	470.3	593.8			1.000105
30500.0	306.7	-42.4	-54.2	25.7**	462.8	591.9			1.000103

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.37 FEET MSL
11 MAY 81 1000 HRS EDT
ASCENSION NO. 79

MANDATORY LEVELS
1310180079
LC-37
TABLE 8

GEOLOGIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	4910.	16.6	1.9	37.	215.9	5.1
800.0	6600.	14.7	-4.9	25.	270.4	14.2
750.0	8376.	10.5	-10.7	21.	281.6	22.2
700.0	10242.	5.4	-13.5	24.	279.5	23.0
650.0	12213.	1.2	-18.4	21.	272.9	25.1
600.0	14307.	-3.4	-21.4	23.	267.3	19.1
550.0	16543.	-8.5	-26.9	21.	259.0	26.4
500.0	18946.	-13.3	-31.4	20.	263.8	29.6
450.0	21541.	-20.6	-34.6	27.	261.2	32.8
400.0	24356.	-27.8	-38.2	36.	266.3	40.5
350.0	27461.	-35.0	-41.6	51.	263.3	44.3
300.0	30926.	-43.9				

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

SIGNIFICANT LEVEL DATA
131002033Z
WHITE SANDS

TABLE 9

STATION ALTITUDE 3989.00 FEET MSL
11 MAY 81 1100 HRS MDT
ASCENSION NO. 332

PRESSURE	GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
677.8	3989.0	24.8	8.7	36.0
550.0	4908.5	20.7	-0.0	25.0
700.0	10277.5	6.7	-14.0	21.0
630.8	13047.1	-7	-17.3	27.0
612.8	13805.3	-2.0	-18.9	26.0
560.6	16104.9	-8.2	-21.2	34.0
551.6	16518.8	-7.3	-27.5	18.0
542.8	16931.2	-6.7	-27.0	18.0
500.0	19016.8	-12.5	-31.6	18.0
429.0	22789.1	-22.6	-36.4	27.0
400.0	24465.5	-26.7	-41.1	24.0
316.6	29879.1	-39.3	-50.2	30.0
300.0	31085.8	-42.3		
250.0	35064.5	-51.5		
233.2	36541.0	-54.8		
200.0	39751.0	-58.3		
187.4	41098.9	-58.8		
178.0	42166.2	-57.8		
169.4	43192.4	-59.2		
150.0	45705.0	-59.2		
140.2	47101.4	-59.1		
114.8	51189.0	-63.8		
101.2	53752.0	-61.8		
100.0	53996.6	-60.3		
89.2	56365.5	-57.1		
75.0	59039.7	-62.8		
70.0	61744.2	-62.5		
67.2	62181.6	-59.6		
62.0	63841.4	-60.6		
50.0	68314.2	-55.9		

STATION ALTITUDE 3989.00 FEET MSL
11 MAY 81 1100 HRS MDT
ASCENSION NO. 332

UPPER AIR DATA
1310020332
WHITE SANDS
TABLE 10

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN) SPEED KNOTS	INDEX OF REFRACTION
3989.0	877.8	24.8	36.0	1021.3	674.1	160.0	1.000276
4000.0	877.5	24.0	35.9	1021.1	674.0	160.3	1.000275
4500.0	862.2	22.5	29.9	1012.3	671.1	175.8	1.000261
5000.0	847.2	20.5	24.9	1002.5	668.4	196.3	1.000250
5500.0	832.0	19.2	24.6	989.1	666.9	218.0	1.000245
6000.0	817.1	17.9	24.2	975.9	665.3	239.9	1.000240
6500.0	802.5	16.5	23.8	962.9	663.8	263.1	1.000235
7000.0	788.1	15.2	23.4	950.1	662.2	273.6	1.000230
7500.0	774.0	13.9	23.1	937.5	660.7	278.0	1.000226
8000.0	760.1	12.6	22.7	925.0	659.1	280.2	1.000221
8500.0	746.5	11.3	22.3	912.7	657.6	280.9	1.000217
9000.0	733.1	10.0	22.0	900.6	656.0	280.9	1.000213
9500.0	720.0	8.7	21.6	888.6	654.5	280.7	1.000210
10000.0	707.1	7.4	21.2	876.9	652.9	280.0	1.000206
10500.0	694.2	6.1	21.5	865.0	651.4	279.3	1.000203
11000.0	681.2	4.8	22.6	853.0	649.8	279.0	1.000200
11500.0	668.6	3.4	23.6	841.2	648.2	277.9	1.000197
12000.0	656.1	2.1	24.7	829.6	646.7	274.2	1.000194
12500.0	643.9	.8	25.8	818.1	645.1	273.6	1.000191
13000.0	631.9	-1.5	26.9	806.9	643.5	275.8	1.000188
13500.0	620.0	-2.5	26.7	794.3	642.4	281.2	1.000184
14000.0	608.2	-3.9	26.7	782.3	641.2	284.7	1.000181
14500.0	596.5	-5.2	28.4	771.1	639.5	283.1	1.000179
15000.0	585.1	-6.6	30.2	760.1	637.9	281.3	1.000176
15500.0	573.9	-7.9	31.9	749.4	636.3	278.8	1.000173
16000.0	562.9	-9.3	33.6	738.7	634.7	275.3	1.000171
16500.0	552.0	-10.7	18.7	723.1	635.3	270.4	1.000165
17000.0	541.3	-12.1	18.0	707.9	635.8	265.1	1.000161
17500.0	530.8	-13.5	18.0	697.8	634.2	263.6	1.000159
18000.0	520.4	-14.9	18.0	687.8	632.5	262.3	1.000156
18500.0	510.3	-16.3	18.0	678.0	630.8	263.6	1.000154
19000.0	500.3	-17.7	18.0	668.4	629.1	264.9	1.000151
19500.0	490.3	-19.1	19.2	658.3	627.5	265.6	1.000149
20000.0	480.4	-20.5	20.3	648.5	625.9	266.2	1.000147
20500.0	470.8	-21.9	21.5	638.8	624.2	265.6	1.000144
21000.0	461.3	-23.3	22.7	629.2	622.6	264.9	1.000142
21500.0	452.0	-24.7	23.9	619.8	621.0	265.0	1.000140
22000.0	443.0	-26.1	25.1	610.6	619.3	265.2	1.000138
22500.0	434.1	-27.5	26.3	601.5	617.7	267.1	1.000136
23000.0	425.2	-28.9	26.6	592.3	616.1	269.2	1.000133

STATION ALTITUDE 3989.00 FEET MSL
11 MAY 81 11 00 HRS MST
ASCENSION NO. 332

UPPER AIR DATA
1310020332
WHITE SANDS
TABLE 10 CONT

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DLPPOINT CENTIGRADE	REL HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	410.5	-24.3	-38.4	25.7	583.0	614.6	271.6	35.7	1.000131
24000.0	407.8	-25.6	-39.8	24.8	573.8	613.1	273.3	36.9	1.000129
24500.0	399.4	-26.8	-41.1	24.0	564.7	611.5	273.8	38.2	1.000127
25000.0	390.9	-27.9	-41.9	24.6	555.2	610.1	274.0	39.8	1.000125
25500.0	382.5	-29.1	-42.8	25.1	546.0	608.6	273.7	42.0	1.000122
26000.0	374.3	-30.3	-43.6	25.7	536.9	607.2	272.9	44.0	1.000120
26500.0	366.3	-31.4	-44.4	26.3	527.9	605.7	271.6	45.4	1.000118
27000.0	358.5	-32.6	-45.2	26.8	519.2	604.3	270.4	46.5	1.000116
27500.0	350.9	-33.8	-46.1	27.4	510.5	602.8	269.4	46.4	1.000114
28000.0	343.4	-34.9	-46.9	27.9	502.1	601.3	268.4	46.5	1.000112
28500.0	336.0	-36.1	-47.8	28.5	493.8	599.9	267.9	47.8	1.000111
29000.0	328.9	-37.3	-48.6	29.0	485.6	598.4	267.5	49.0	1.000109
29500.0	321.8	-38.4	-49.5	29.6	477.6	596.9	265.9	49.3	1.000107
30000.0	314.9	-39.6	-51.3	27.0**	469.7	595.4	264.2	49.6	1.000105
30500.0	307.9	-40.8	-57.5	14.6**	461.8	593.8	263.9	49.9	1.000103
31000.0	301.2	-42.1	-72.3	2.1**	454.0	592.2	264.0	50.2	1.000101
31500.0	294.4	-43.3			446.1	590.7	264.4	52.9	1.000099
32000.0	287.7	-44.4			438.2	589.2	264.7	56.5	1.000098
32500.0	281.2	-45.6			430.4	587.7	264.5	59.8	1.000096
33000.0	274.8	-46.7			422.8	586.2	264.2	62.9	1.000094
33500.0	268.6	-47.9			415.3	584.7	264.5	65.2	1.000093
34000.0	262.5	-49.0			408.0	583.2	265.3	66.9	1.000091
34500.0	256.6	-50.2			400.9	581.7	266.0	68.4	1.000089
35000.0	250.7	-51.4			393.8	580.2	266.5	66.9	1.000088
35500.0	244.9	-52.5			386.6	578.7	267.0	65.3	1.000086
36000.0	239.2	-53.6			379.6	577.3	267.1	65.3	1.000085
36500.0	233.7	-54.7			372.6	575.8	267.0	65.9	1.000083
37000.0	228.1	-55.3			364.8	575.0	267.1	66.9	1.000081
37500.0	222.7	-55.8			357.1	574.3	267.5	68.6	1.000080
38000.0	217.5	-56.4			349.5	573.6	267.8	70.1	1.000078
38500.0	212.3	-56.9			342.1	572.8	268.2	67.8	1.000076
39000.0	207.3	-57.5			334.9	572.1	268.8	65.5	1.000075
39500.0	202.4	-58.0			327.8	571.4	269.2	65.5	1.000073
40000.0	197.6	-58.4			320.5	570.9	269.6	66.3	1.000071
40500.0	192.9	-58.6			313.2	570.7	269.7	67.4	1.000070
41000.0	188.3	-58.8			306.0	570.4	269.6	68.8	1.000068
41500.0	183.8	-58.4			298.2	570.9	269.4	70.3	1.000066
42000.0	179.4	-58.0			290.5	571.5	268.9	69.7	1.000065
42500.0	175.2	-58.3			283.9	571.1	263.4	68.5	1.000063
43000.0	171.0	-58.9			278.1	570.2	267.8	67.1	1.000062

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

UPPER AIR DATA
1310020332
WHITE SANDS
TABLE 10 CON'T

STATION ALTITUDE 3989.00 FEET MSL
11 MAY 81 11 ON HRS EDT
ASCENSION NO. 332

GEODETTIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES C	TEMPERATURE DEWPOINT DEGREES C	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
43500.0	160.9	-59.2	-59.2	271.7	569.8	267.4	267.4	64.8	1.000061
44000.0	162.9	-59.2	-59.2	265.3	569.8	267.0	267.0	62.5	1.000059
44500.0	159.0	-59.2	-59.2	258.9	569.8	260.8	260.8	60.7	1.000058
45000.0	155.2	-59.2	-59.2	252.7	569.8	260.5	260.5	59.2	1.000056
45500.0	151.5	-59.2	-59.2	246.7	569.8	260.3	260.3	57.6	1.000055
46000.0	147.9	-59.2	-59.2	240.8	569.9	260.1	260.1	56.3	1.000054
46500.0	144.3	-59.1	-59.1	235.0	569.9	265.9	265.9	55.0	1.000052
47000.0	140.9	-59.1	-59.1	229.3	570.0	265.8	265.8	53.7	1.000051
47500.0	137.5	-59.6	-59.6	224.2	569.4	265.9	265.9	52.4	1.000050
48000.0	134.2	-60.1	-60.1	219.4	568.6	260.0	260.0	51.1	1.000049
48500.0	130.9	-60.7	-60.7	214.7	567.8	260.7	260.7	49.8	1.000048
49000.0	127.8	-61.3	-61.3	210.1	567.1	267.6	267.6	48.6	1.000047
49500.0	124.7	-61.9	-61.9	205.6	566.3	268.5	268.5	47.3	1.000046
50000.0	121.7	-62.4	-62.4	201.2	565.5	269.5	269.5	46.0	1.000045
50500.0	118.7	-63.0	-63.0	196.8	564.7	270.7	270.7	44.7	1.000044
51000.0	115.9	-63.6	-63.6	192.6	564.0	271.2	271.2	43.9	1.000043
51500.0	113.1	-63.6	-63.6	187.9	564.0	271.4	271.4	43.3	1.000042
52000.0	110.3	-63.2	-63.2	183.0	564.5	271.7	271.7	42.5	1.000041
52500.0	107.6	-62.8	-62.8	178.2	565.1	272.6	272.6	40.3	1.000040
53000.0	105.0	-62.4	-62.4	173.6	565.6	273.6	273.6	38.2	1.000039
53500.0	102.5	-62.0	-62.0	169.0	566.1	275.0	275.0	35.0	1.000038
54000.0	100.0	-60.3	-60.3	163.6	568.4	277.0	277.0	31.0	1.000036
54500.0	97.6	-59.6	-59.6	159.2	569.3	279.7	279.7	27.0	1.000035
55000.0	95.3	-58.9	-58.9	154.9	570.2	278.3	278.3	24.1	1.000035
55500.0	93.0	-58.3	-58.3	150.8	571.1	270.6	270.6	21.2	1.000034
56000.0	90.8	-57.6	-57.6	146.7	572.0	273.0	273.0	19.2	1.000033
56500.0	88.6	-57.3	-57.3	143.0	572.3	267.0	267.0	18.5	1.000032
57000.0	86.5	-56.1	-56.1	140.1	571.3	260.7	260.7	17.9	1.000031
57500.0	84.4	-58.9	-58.9	137.3	570.2	257.6	257.6	18.9	1.000031
58000.0	82.4	-59.7	-59.7	134.5	569.2	255.2	255.2	20.1	1.000030
58500.0	80.4	-60.5	-60.5	131.8	568.1	253.3	253.3	21.1	1.000029
59000.0	78.5	-61.3	-61.3	129.1	567.0	252.8	252.8	21.7	1.000029
59500.0	76.6	-62.1	-62.1	126.5	566.0	252.3	252.3	22.3	1.000028
60000.0	74.8	-62.8	-62.8	123.8	565.0	252.3	252.3	22.7	1.000028
60500.0	73.0	-62.7	-62.7	120.8	565.2	255.7	255.7	21.4	1.000027
61000.0	71.2	-62.6	-62.6	117.8	565.3	259.6	259.6	20.1	1.000026
61500.0	69.5	-62.0	-62.0	114.6	566.2	263.8	263.8	19.0	1.000026
62000.0	67.8	-60.2	-60.2	110.9	568.5	265.4	265.4	18.7	1.000025
62500.0	66.2	-59.8	-59.8	108.0	569.0	267.1	267.1	18.3	1.000024
63000.0	64.6	-60.1	-60.1	105.6	568.6	267.7	267.7	16.6	1.000024

STATION ALTITUDE 3989.00 FEET MSL		UPPER AIR DATA		GEODETIC COORDINATES	
11 MAY 81 1100 HRS MDT		1310020332		32.40043 LAT DEG	
ASCENSION NO. 332		WHITE SANDS		106.37033 LON DEG	

TABLE 10 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES (TN)	SPEED KNOTS	
63500.0	63.0	-60.4			103.2	568.2	264.2	11.6	1.000023
64000.0	61.5	-60.4			100.8	568.2	255.5	6.7	1.000022
64500.0	60.1	-59.9			98.1	568.9	229.8	2.9	1.000022
65000.0	58.6	-59.4			95.6	569.6	146.5	2.1	1.000021
65500.0	57.2	-58.9			93.1	570.3	110.2	4.8	1.000021
66000.0	55.9	-58.3			90.6	571.0	120.2	4.3	1.000020
66500.0	54.6	-57.8			88.3	571.7	164.4	3.0	1.000020
67000.0	53.3	-57.3			86.0	572.4			1.000019
67500.0	52.0	-56.8			83.7	573.1			1.000019
68000.0	50.8	-56.2			81.5	573.8			1.000018

STATION ALTITUDE 3989.00 FEET MSL
11 MAY 81 1100 HRS MST
ASCENSION NO. 332

MANDATORY LEVELS
1310020332
WHITE SANDS
TABLE 11

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
853.0	4905.	20.7	-0.0	25.	192.2	6.8
800.0	6608.	16.3	-4.4	24.	266.5	12.7
750.0	8392.	11.7	-9.1	22.	280.7	21.8
700.0	10267.	6.7	-14.0	21.	279.6	25.3
650.0	12244.	1.4	-16.3	25.	272.4	20.4
600.0	14338.	-3.5	-19.3	28.	283.5	23.9
550.0	16572.	-7.2	-27.4	18.	269.4	29.7
500.0	18990.	-12.5	-31.8	18.	264.9	32.5
450.0	21595.	-19.4	-34.7	24.	265.0	34.6
400.0	24425.	-26.7	-41.1	24.	273.7	38.1
350.0	27541.	-33.9	-46.2	27.	269.2	45.4
300.0	31024.	-42.3			264.0	50.2
250.0	34988.	-51.5			266.5	66.7
200.0	39656.	-58.3			269.4	65.9
175.0	42412.	-58.3			268.4	68.5
150.0	45582.	-59.2			268.2	57.1
125.0	49318.	-61.8			268.3	47.5
100.0	53830.	-60.3			276.9	31.2
80.0	58427.	-60.7			253.2	21.2
70.0	61134.	-62.5			262.3	19.4
60.0	64286.	-59.9			231.1	3.0
50.0	68057.	-55.9				

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.3/ FEET MSL
11 MAY 61
ASCENSION NO. 80

SIGNIFICANT LLVLL DATA
1310180060
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.51232 LON DEG

TABLE 12

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR DEWPOINT	REL. HUM.
MILLIBARS	MSL FEET	DEGREES CENTIGRADE	PERCENT
875.6	4051.4	26.6	23.0
872.4	4156.9	24.5	22.0
850.0	4800.0	21.5	25.0
832.2	5500.2	20.2	25.0
812.6	6172.0	18.0	25.0
793.2	6848.6	16.6	20.0
763.2	7919.1	13.1	30.0
700.0	10277.4	6.5	33.0
659.0	11890.3	1.5	47.0
639.8	12670.8	-2	37.0
630.8	13043.1	-9	36.0
613.0	13793.1	-1.7	32.0
568.8	15734.0	-6.3	25.0
560.4	16117.2	-5.4	20.0
552.0	16506.7	-5.6	19.0
518.0	18133.8	-9.4	18.0
500.0	19028.7	-11.7	20.0
454.0	21429.6	-18.3	27.0
438.6	22272.9	-20.9	29.0
430.6	22719.5	-22.0	28.0
416.0	23551.6	-23.7	25.0
400.0	24490.5	-25.9	24.0
345.6	27916.3	-34.2	27.0
318.8	29759.7	-38.4	30.0
300.0	31123.9	-42.4	

STATION ALTITUDE 4051.37 FEET MSL
11 MAY 81 1200 HRS MDT
ASCENSION NO. 80

UPPER AIR DATA
1310180080
LC-37

GEODETTIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 13

GOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
4051.4	875.6	26.6	23.0	1014.1	675.7	180.0	6.0	1.000260
4500.0	862.0	23.1	23.4	1010.6	671.5	186.6	7.0	1.000254
5000.0	847.0	21.3	25.0	999.3	669.4	191.9	8.2	1.000250
5500.0	832.2	20.2	25.0	985.6	668.1	195.9	9.5	1.000246
6000.0	817.6	18.6	25.0	973.9	666.2	200.2	10.2	1.000241
6500.0	803.1	17.3	22.6	961.2	664.7	208.5	9.6	1.000234
7000.0	788.9	16.1	21.4	948.3	663.2	217.8	9.3	1.000229
7500.0	774.8	14.5	26.1	936.5	661.4	232.3	9.7	1.000228
8000.0	760.9	12.9	30.1	924.7	659.6	245.6	11.0	1.000227
8500.0	747.1	11.5	30.7	912.5	657.9	253.7	12.9	1.000223
9000.0	733.6	10.1	31.4	900.5	656.3	255.1	15.5	1.000219
9500.0	720.2	8.7	32.0	888.6	654.6	255.7	17.8	1.000215
10000.0	707.2	7.3	32.6	876.9	653.0	255.0	19.3	1.000211
10500.0	694.2	5.8	34.9	865.4	651.2	255.1	20.7	1.000208
11000.0	681.3	4.3	39.3	854.1	649.5	260.9	20.8	1.000206
11500.0	668.7	2.7	43.6	842.9	647.6	266.5	21.1	1.000204
12000.0	656.3	1.3	45.6	831.7	645.9	273.7	22.3	1.000201
12500.0	644.0	.2	39.2	819.6	644.5	276.1	24.6	1.000195
13000.0	631.8	-8.8	36.1	807.2	643.3	275.6	27.6	1.000190
13500.0	619.9	-1.4	33.6	793.7	642.6	275.9	30.6	1.000186
14000.0	608.1	-2.2	31.3	781.1	641.6	276.6	32.2	1.000182
14500.0	596.5	-3.4	29.5	769.6	640.2	275.0	32.0	1.000179
15000.0	585.1	-4.6	27.6	758.3	638.7	271.0	31.5	1.000175
15500.0	574.0	-5.7	25.8	747.2	637.3	266.9	33.2	1.000172
16000.0	563.0	-5.7	21.5	732.8	637.3	264.8	33.9	1.000168
16500.0	552.1	-5.6	19.0	718.5	637.4	263.4	34.0	1.000164
17000.0	541.5	-6.8	18.7	707.7	636.0	262.8	33.2	1.000161
17500.0	531.0	-7.9	18.4	697.1	634.6	263.2	33.3	1.000159
18000.0	520.7	-9.1	18.1	686.7	633.2	263.7	33.5	1.000156
18500.0	510.6	-10.3	18.8	676.5	631.7	264.4	33.6	1.000154
19000.0	500.6	-11.6	19.9	666.5	630.1	265.2	33.7	1.000151
19500.0	490.6	-13.0	21.4	656.7	628.5	265.6	35.0	1.000149
20000.0	480.9	-14.4	22.8	647.1	626.8	265.8	36.2	1.000147
20500.0	471.3	-15.7	24.3	637.6	625.1	265.3	37.3	1.000145
21000.0	461.9	-17.1	25.7	628.3	623.5	265.0	38.0	1.000142
21500.0	452.7	-18.5	27.2	619.1	621.8	264.7	37.8	1.000140
22000.0	443.5	-20.1	28.4	610.3	619.9	265.3	39.1	1.000138
22500.0	434.5	-21.5	28.5	601.2	618.1	267.6	38.3	1.000136
23000.0	425.6	-22.6	27.0	591.6	616.8	269.7	34.8	1.000133
23500.0	416.9	-23.6	25.2	581.8	615.5	270.0	34.1	1.000131

STATION ALTITUDE 4051.37 FEET MSL
11 MAY 81 1200 HRS MDT
ASCENSION NO. 89

UPPER AIR DATA
1310180080
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GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

TABLE 13 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
24000.0	400.3	-24.8	-39.2	24.5	572.5	614.1	270.1	34.1	1.000129
24500.0	399.8	-25.9	-40.4	24.0	563.3	612.6	270.1	34.1	1.000127
25000.0	391.4	-27.1	-41.3	24.4	554.1	611.1	270.1	34.1	1.000124
25500.0	383.1	-28.3	-42.2	24.9	545.1	609.6	269.9	34.5	1.000122
26000.0	375.0	-29.6	-43.1	25.3	536.3	608.1	270.0	33.4	1.000120
26500.0	367.1	-30.8	-44.0	25.8	527.6	606.6	270.5	30.3	1.000118
27000.0	359.4	-32.0	-44.9	26.2	519.1	605.0	272.0	24.2	1.000116
27500.0	351.8	-33.2	-45.8	26.6	510.7	603.5	269.5	35.8	1.000114
28000.0	344.3	-34.4	-46.7	27.1	502.4	602.0	267.4	54.8	1.000112
28500.0	336.9	-35.5	-47.4	27.9	493.8	600.6	260.1	69.7	1.000111
29000.0	329.6	-36.7	-48.2	28.8	485.5	599.1	265.5	58.2	1.000109
29500.0	322.4	-37.8	-49.0	29.6	477.3	597.7	265.1	52.9	1.000107
30000.0	315.4	-39.1	-51.7	24.7**	469.4	596.0	264.8	51.7	1.000105
30500.0	308.5	-40.6	-57.7	13.7**	462.0	594.1			1.000103
31000.0	301.7	-42.0	-70.6	2.7**	454.7	592.3			1.000101

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.37 FEET MSL
 11 MAY 81 1200 HRS MDT
 ASCENSION NO. 80

MANDATORY LEVELS
 1310180080
 LC-37

GEODETIC COORDINATES
 32.40175 LAT LEG
 106.51252 LON LEG

TABLE 14

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR	DEWPOINT	PERCENT		DIRECTION	SPEED
		DEGREES	CENTIGRADE			DEGREES (TN)	KNOTS
850.0	4896.	21.5	.7	25.		191.0	0.0
800.0	6605.	17.1	-4.9	22.		210.4	9.5
750.0	8392.	11.8	-5.0	31.		253.3	12.4
700.0	10267.	6.5	-8.6	33.		254.7	20.2
650.0	12241.	.7	-10.6	42.		276.6	23.2
600.0	14335.	-3.0	-18.1	30.		276.2	32.4
550.0	16579.	-5.8	-25.7	19.		263.3	33.9
500.0	19002.	-11.7	-30.1	20.		265.2	33.8
450.0	21614.	-19.0	-33.0	28.		264.7	37.7
400.0	24450.	-25.9	-40.4	24.		270.1	34.1
350.0	27574.	-33.5	-46.0	27.		268.9	40.2
300.0	31062.	-42.4					

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.37 FEET MSL
11 MAY 81
ASCENSION NO. 81

SIGNIFICANT LEVEL DATA
1310180081
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TABLE 15

GEODETIC COORDINATES
32.40175 LAT LFG
106.31232 LON DEG

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR	DEWPOINT DEGREES	REL. HUM. PERCENT
MILLIBARS	MSL FEET	DEGREES	CENTIGRADE	
874.6	4051.4	28.4	-1.6	14.0
869.6	4217.3	25.6	-1.2	17.0
850.0	4871.7	23.5	-7	20.0
776.2	7437.0	16.1	-6.8	20.0
748.6	8441.0	13.0	-8.8	21.0
721.4	9456.5	10.1	-9.5	24.0
700.0	10275.6	8.0	-11.3	24.0
686.2	10813.3	6.1	-11.9	26.0
659.8	11862.9	2.8	-13.0	30.0
617.0	13630.9	-2.1	-13.9	40.0
600.0	14358.1	-4.2	-14.9	43.0
583.4	15083.1	-5.9	-17.9	38.0
566.8	15825.9	-6.4	-22.7	26.0
550.4	16578.6	-7.7	-26.7	20.0
518.4	18102.5	-10.5	-30.2	18.0
500.0	19013.4	-12.6	-31.4	19.0
479.2	20074.4	-15.4	-33.7	19.0
434.4	22482.1	-21.8	-35.7	27.0
412.8	23709.8	-25.0	-38.5	27.0
400.0	24460.6	-26.7	-40.7	25.0
377.8	25807.9	-30.0	-43.6	25.0
331.2	28945.0	-37.7	-49.1	29.0
305.6	30651.6	-42.8		
300.0	31961.9	-43.4		

STATION ALTITUDE 4051.37 FEET MSL
11 MAY 81 1300 HRS MDT
ASCENSION NO. 81

UPPER AIR DATA
1310180081
LC-37

GEOMETRIC COORDINATES
12.540175 LAT DEG
16.512322 LONG DEG

TABLE 16

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (IN) DEGREES	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	874.6	28.4	-1.6	14.0	1008.0	677.3	260.0	9.9	1.000247
4500.0	861.1	24.7	-1.0	18.3	1004.6	673.2	268.1	11.5	1.000248
5000.0	846.1	23.1	-1.0	20.0	992.4	671.4	274.8	13.5	1.000246
5500.0	831.3	21.7	-2.2	20.0	979.9	669.7	279.7	15.7	1.000241
6000.0	816.7	20.2	-3.4	20.0	967.6	668.0	281.5	16.9	1.000236
6500.0	802.4	18.8	-4.6	20.0	955.5	666.3	280.2	16.6	1.000232
7000.0	788.3	17.4	-5.8	20.0	943.5	664.6	278.7	16.2	1.000228
7500.0	774.4	15.9	-7.0	20.1	931.7	662.9	273.6	14.6	1.000224
8000.0	760.6	14.4	-7.9	20.6	920.0	661.1	267.2	13.3	1.000220
8500.0	747.0	12.8	-8.8	21.2	908.5	659.3	259.5	12.7	1.000217
9000.0	733.5	11.4	-9.2	22.7	896.6	657.7	254.5	13.3	1.000214
9500.0	720.2	10.0	-9.6	24.0	884.8	656.0	252.3	15.0	1.000211
10000.0	707.1	8.7	-10.7	24.0	872.7	654.5	251.3	17.1	1.000207
10500.0	694.2	7.2	-11.6	24.8	861.4	652.8	249.8	18.8	1.000204
11000.0	681.4	5.5	-12.1	26.7	850.7	650.8	253.4	20.3	1.000201
11500.0	668.8	3.9	-12.6	28.6	839.7	648.9	259.5	19.7	1.000199
12000.0	656.4	2.4	-13.0	30.8	828.7	647.1	263.4	14.6	1.000196
12500.0	644.0	1.0	-13.2	33.6	817.2	645.5	263.5	11.1	1.000193
13000.0	631.9	-0.4	-13.4	36.4	806.0	643.9	259.6	13.8	1.000191
13500.0	620.1	-1.7	-13.8	39.3	794.9	642.2	255.0	22.2	1.000188
14000.0	608.3	-3.2	-14.4	41.5	783.9	640.5	255.9	26.9	1.000185
14500.0	596.7	-4.5	-15.5	42.0	773.0	638.9	261.5	30.2	1.000182
15000.0	585.3	-5.7	-17.5	38.6	761.6	637.4	270.1	32.6	1.000178
15500.0	574.0	-6.2	-20.4	31.3	748.4	636.8	278.0	33.6	1.000173
16000.0	563.0	-6.7	-23.6	24.6	735.6	636.1	281.4	34.4	1.000169
16500.0	552.1	-7.6	-26.2	20.6	723.8	635.0	281.3	34.6	1.000165
17000.0	541.4	-8.5	-27.6	19.4	712.2	633.9	280.1	34.0	1.000162
17500.0	530.8	-9.4	-28.8	18.8	700.8	632.8	277.6	34.1	1.000159
18000.0	520.5	-10.3	-29.9	18.1	689.6	631.7	274.3	33.4	1.000156
18500.0	510.3	-11.4	-30.7	18.4	679.0	630.4	271.7	33.6	1.000154
19000.0	500.3	-12.6	-31.3	19.0	668.6	629.0	269.7	34.5	1.000151
19500.0	490.4	-13.9	-32.4	19.0	658.7	627.4	268.7	35.2	1.000149
20000.0	480.6	-15.2	-33.5	19.0	648.9	625.8	269.4	35.3	1.000147
20500.0	471.0	-16.5	-33.9	20.4	639.2	624.2	270.1	35.4	1.000144
21000.0	461.5	-17.9	-34.3	22.1	629.5	622.5	271.0	35.1	1.000142
21500.0	452.1	-19.2	-34.7	23.7	620.1	620.9	271.3	35.0	1.000140
22000.0	443.0	-20.5	-35.2	25.4	610.7	619.3	270.8	35.1	1.000138
22500.0	434.1	-21.8	-35.7	27.0	601.6	617.7	270.6	35.4	1.000136
23000.0	425.2	-23.1	-36.9	27.0	592.3	616.0	270.6	35.7	1.000133
23500.0	416.4	-24.5	-38.0	27.0	583.2	614.4	271.1	36.0	1.000131

STATION ALTITUDE 4051.37 FEET MSL
 11 MAY 81 13 00 HRS MDT
 ASCENSION NO. 81

UPPER AIR DATA
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GEOMETRIC COORDINATES
 42.40175 LAT DEG
 106.51232 LONG DEG

TABLE 16 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN) SPEED KNOTS	INDEX OF REFRACTION
24000.0	407.8	-25.7	26.2	573.9	612.9	271.5	1.000129
24500.0	399.3	-26.8	25.0	564.6	611.5	269.9	1.000127
25000.0	391.0	-28.0	25.0	555.5	610.0	268.7	1.000125
25500.0	382.8	-29.2	25.0	546.6	608.5	267.8	1.000123
26000.0	374.7	-30.5	25.3	537.8	606.9	267.5	1.000121
26500.0	366.6	-31.8	25.9	529.0	605.3	267.4	1.000119
27000.0	358.4	-33.0	26.6	520.4	603.7	267.3	1.000117
27500.0	351.1	-34.3	27.2	512.0	602.1	267.7	1.000115
28000.0	343.6	-35.6	27.9	503.7	600.5	269.9	1.000113
28500.0	336.2	-36.8	28.5	495.5	598.9	270.9	1.000111
29000.0	328.9	-38.1	26.5**	487.5	597.2	268.8	1.000109
29500.0	321.7	-39.5	18.5**	479.7	595.4		1.000107
30000.0	314.6	-41.0	10.5**	472.0	593.6		1.000105
30500.0	307.7	-42.4	2.4**	464.4	591.8		1.000103
31000.0	300.8	-43.3		456.0	590.6		1.000102

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.37 FEET MSL
11 MAY 81 1300 HRS MDT
ASCENSION NO. 81

MANDATORY LEVELS
1310180081
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TABLE 17

GEODETIC COORDINATES
32.40175 LAT UEG
106.31232 LON UEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4868.	23.5	-7.7	20.	273.2	13.0
800.0	6586.	18.6	-4.8	20.	280.0	16.6
750.0	8382.	13.2	-8.7	21.	261.3	12.8
700.0	10265.	8.0	-11.3	24.	250.5	18.0
650.0	12247.	1.7	-13.1	32.	264.6	10.9
600.0	14341.	-4.2	-14.9	43.	258.7	29.5
550.0	16576.	-7.7	-26.7	20.	281.1	34.6
500.0	18987.	-12.6	-31.4	19.	269.7	34.5
450.0	21590.	-19.5	-34.8	24.	271.2	35.0
400.0	24420.	-26.7	-40.7	25.	270.1	38.2
350.0	27533.	-34.5	-46.7	27.	267.9	39.2
300.0	31000.	-43.4				

